

MATSUSHIMA

Serial No.: 10/052,345

Reply to office action dated May 29, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-8 (canceled)

Claim 9 (Original): A semiconductor device comprising:

- a plurality of scanning lines;
- a plurality of signal lines arranged to cross said scanning lines;
- a switching element provided at an intersection of one of said scanning lines and one of said signal lines;
- an inter-layer insulating film made of an organic material formed above said scanning lines, said signal lines and said switching element;
- a picture element electrode formed above said inter-layer insulating film; and

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Claim 10 (Original): The semiconductor device according to claim 9, wherein said additional capacity common wiring is provided at least in a position where said additional capacity common wiring overlaps said switching element.

Claim 11 (Original): The semiconductor device according to claim 10, wherein said additional capacity common wiring covers at least a PN junction in the switching element and functions as a light shielding film.

Claim 12 (Original): The semiconductor device according to claim 9, wherein said additional capacity common wiring is provided in a position where said additional capacity common wiring overlaps at least said scanning lines or said signal lines.

Claim 13 (Original): The semiconductor device according to claim 9, wherein said additional capacity common wiring is made of the same material as a metal for obtaining ohmic contact of a drain electrode of said switching element with the picture element electrode.

Claim 14 (Original): The semiconductor device according to claim 9, wherein said scanning lines and said signal lines are formed on one of paired substrates and a counter substrate which is the other one of paired substrates does not have a black matrix.

Claim 15 (Original): The semiconductor device according to claim 9, wherein the dielectric constant of an insulating film used as a dielectric of the additional capacity

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section is larger than the dielectric constant of the organic material of said inter-layer insulating film.

Claim 16 (Original): The semiconductor device according to claim 15, wherein the dielectric of the additional capacity is made of an anodic oxide film.

Claim 17 (Original): A semiconductor device comprising:

a non-monocrystal silicon thin film, a gate insulating film, and a gate bus wiring provided on one of paired substrates in this order;

a first inter-layer insulating film made of an organic material laminated above said gate bus wiring; and

a source bus wiring, a second inter-layer insulating film, and a picture element electrode provided above said first inter-layer insulating film in this order.

Claim 18 (Original): A semiconductor device, comprising:

a thin film transistor including a semiconductor layer, a gate insulating layer, and a gate electrode;

a first inter-layer insulating film provided above the thin film transistor;

a source electrode and a piling electrode provided above the first inter-layer insulating film;

a second inter-layer insulating film provided above the piling electrode;

a picture element electrode provided above the second inter-layer insulating film;

and

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an additional capacity for holding electrode charges of the picture element electrode provided between the first and second inter-layer insulating films;

wherein the piling electrode electrically connects the semiconductor layer of the thin film transistor and the picture element electrode and the piling electrode extends in a direction of a thickness of said first inter-layer film, and

wherein the additional capacity includes a first electrode, a second electrode, and an inorganic insulating film provided between the first and second electrodes, the first electrode is the piling electrode, and the inorganic insulating film has a greater dielectric constant than at least one of the first and second inter-layer insulating films.

Claim 19 (Currently Amended): A semiconductor device comprising:

a substrate;

a picture element electrode provided on said substrate;

a thin film transistor for driving said picture element electrode, provided on said substrate; and

a conductive light shielding layer provided above said thin film transistor and below said picture element electrode,

wherein said conductive light shielding layer is provided on a flattened layer and comprises part of an additional capacity section.

Claim 20 (New): The semiconductor device according to claim 19, wherein said thin film transistor is formed on a semiconductor layer, and said conductive light shielding layer is insulated from said semiconductor layer.

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Claim 21 (New): A semiconductor device comprising:

- a substrate;
- a picture element electrode provided on said substrate;
- a thin film transistor for driving said picture element electrode, provided on said substrate; and
- a conductive light shielding layer provided above said thin film transistor and below said picture element electrode,

wherein said conductive light shielding layer is provided on a flattened layer which is comprised of an organic material.

Claim 22 (New): The semiconductor device according to claim 21, wherein said thin film transistor is formed on a semiconductor layer, and said conductive light shielding layer is insulated from said semiconductor layer.

Claim 23 (New): A semiconductor device comprising:

- a scanning line;
- a signal line crossing the scanning line;
- a switching element provided at an intersection of the scanning line and the signal lines;
- an inter-layer insulating film comprising an organic material formed above the scanning line, the signal line and the switching element;
- a picture element electrode formed above the inter-layer insulating film; and

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an additional capacity electrode formed above the inter-layer insulating film,
wherein an additional capacity section comprises the picture element electrode
and the additional capacity electrode.

Claim 24 (New): The semiconductor device according to claim 23, wherein
the additional capacity electrode overlaps the switching element.

Claim 25 (New): The semiconductor device according to claim 23, wherein
the additional capacity electrode shields light from a PN junction of the switching
element.

Claim 26 (New): The semiconductor device according to claim 23, wherein
the additional capacity electrode overlaps at least one of the scanning line and the signal
line.

Claim 27 (New): The semiconductor device according to claim 23, further
comprising:

an ohmic contact between an electrode of the switching device and the picture
element electrode,

wherein the additional capacity electrode is made of the same material as the
ohmic contact.

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Claim 28 (New): The semiconductor device according to claim 23, wherein the scanning line and the signal line are formed on one of a pair of substrates of the semiconductor device and no black matrix is formed on the other one of the pair of substrates.

Claim 29 (New): The semiconductor device according to claim 23, wherein the additional capacity section further comprises an insulating film having a dielectric constant greater than a dielectric constant of the organic material of the inter-layer insulating film.

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Claim 30 (New): The semiconductor device according to claim 29, wherein the insulating film of the additional capacity section comprises an anodic oxide film.
